Loxahatchee Impoundment Landscape Assessment (LILA) Fact Sheet

FEBRUARY 2003

Background

Everglades restoration is an enormous effort including many projects and activities outlined in the Comprehensive Everglades Restoration Plan. The plans for restoration are built on the interpretation of performance measures designed to monitor an individual project's success.

The Loxahatchee Impoundment Landscape Assessment (LILA) project is underway in the Arthur R. Marshall Loxahatchee National Wildlife Refuge and will assist in developing performance measures for Everglades restoration. The project divides two existing 34-acre impoundments into four 17-acre impoundments, and includes a re-circulating water system that provides precise control over water levels.

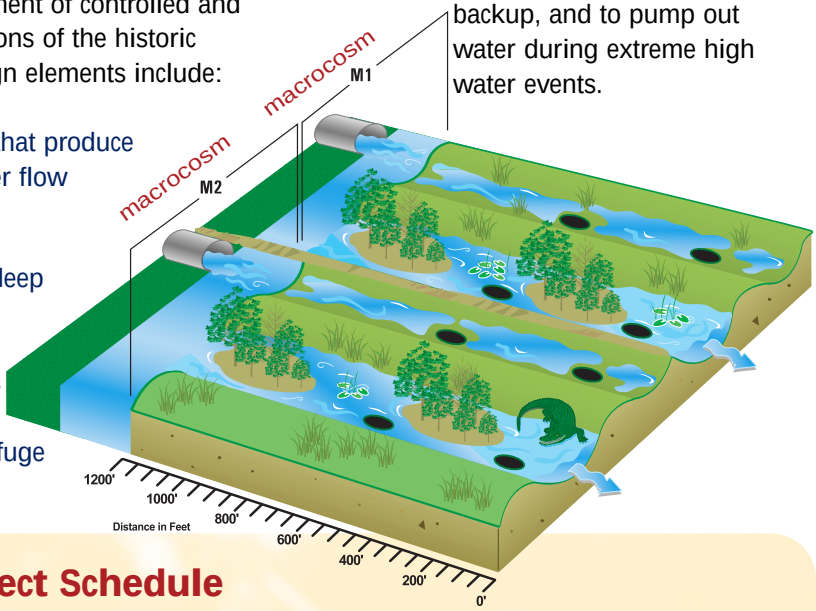
Each impoundment is constructed to physically mimic the Everglades landscape. Water depths and flows are manipulated to induce responses by wildlife, tree island, and ridge and slough communities. Scientists and engineers use the project to test restoration plans on a small scale before applying them to the large-scale Everglades ecosystem.

Project Design and Operation

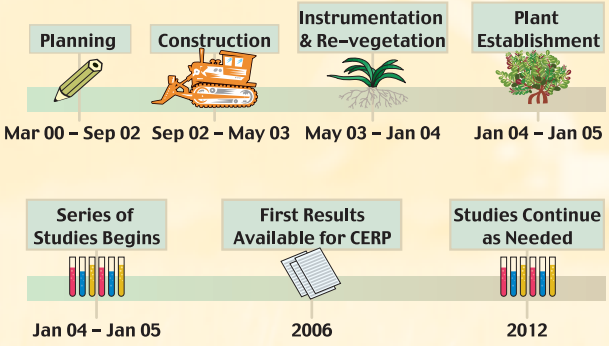
Four small enclosed marshes areas called "macrocosms" were constructed from two impoundments that already existed at the refuge. All receive the same hydrologic treatment; that is, flow rate, water depths, etc. In each macrocosm, a shallow and a deep slough are sculpted from the existing marsh surface. Ridges separate the sloughs. Specific design and operation conditions provide data for collective assessment of controlled and replicated conditions of the historic Everglades. Design elements include:

- Constrictions that produce areas of higher flow velocities.
- Shallow and deep holes that simulate alligator holes and provide deep-water refuge for fish.
- Tree islands in deep sloughs, built from peat on a limestone rubble core.
- Controlled access of aquatic animals to the deep-water section of the refuge.

To provide flowing water to the project, a re-circulating water system is established using an electric pump, gravity flow, and gated structures. A second portable pump is used as a backup, and to pump out water during extreme high water events.



LILA Project Schedule



The Loxahatchee Impoundment Landscape Assessment (LILA) is a research facility that replicates the Everglades landscape. Scientists and engineers will use LILA to test restoration plans on a "small-scale" before applying them to the "large-scale" Everglades ecosystem.

Restoration Assessment Studies

The complexities of Everglades restoration make it essential that decisions are made according to sound science. The studies in LILA provide this science because they control hydrology, allowing for precise measurement of the environmental response. Once the ridge and slough landscape features are constructed, researchers will manipulate water flow depths and flow rates to examine their effects upon wading birds, fish, soil, water quality and a wide variety of plants. The results of these studies will better define the hydrologic patterns that sustain a healthy Everglades. They will also guide the Comprehensive Plan by ensuring that reliable science is maintained in a system-wide perspective of the restoration program.

Opportunities for Public Education

LILA provides an ideal opportunity for the public to learn about the Comprehensive Everglades Restoration Plan. While Everglades restoration will be long-term and take place largely out of the public's view, the LILA project will allow for public access where the process of restoration can be experienced first hand. Visitors will be able to see construction work that restores tree islands and ridge and slough habitats, increases wildlife use, and demonstrates the integration of science into the restoration process.

An information kiosk will provide visitors with information about the project, and opportunities will be available for guided tours of the impoundments. The public can spend a morning watching a flock of wading birds feed in a restored slough habitat at the same time that scientists are collecting valuable information to support the Comprehensive Everglades Restoration Plan.

the journey to restore America's Everglades

The Journey to Restore America's Everglades

A partnership of the **U.S. Army Corps of Engineers**, **South Florida Water Management District** and many state, federal and tribal partners.